

## WHAT IS CLAIMED IS:

1. A (1) harvester for a forestry machine, comprising grapple means (4, 5) for grasping a tree stem (15), a cutting tool (8) for cutting off the tree stem (15), a limbing or trimming device (6) for trimming the tree stem (15), advancement means (7) for advancing the tree stem (15) in the axial direction past the trimming device (6) and the cutting tool (8), a measurement device (10) for measuring the length of the tree stem and a measurement device (11) for measuring how the transverse dimension of the tree stem (15) varies along its length, this measurement device (11) including movable measurement means (14) for contact-free detection of the outer contour of the tree stem (15), from which its diameter is calculable, characterised in that the measurement device (11) is located between the trimming device (6) and the advancement means (7) for counteracting dirtying of the measurement device.
2. The harvester as claimed in Claim 1, characterised in that the measurement device (11) is disposed beyond a gap (13) counting from the tree stem (15) for counteracting dirtying of the measurement device (11).
3. The harvester as claimed in Claim 1 or 2, characterised in that the measurement device (11) is disposed above the tree stem (15) during the trimming operation for avoiding dirtying of the measurement device (11).
4. The harvester as claimed in any of Claims 1 to 3, characterised in that the measurement device (11) includes a processing unit for receiving positional indications from the measurement means (14) on detection of the outer contour from which the diameter is calculable.
5. The harvester as claimed in Claim 4, characterised in that the processing unit is operative to control the movements of the measurement means (14).
6. The harvester as claimed in any of Claims 1 to 5, characterised in that the measurement means (14) are movable in a direction substantially transversely directed in relation to the tree stem (15).

7. The harvester as claimed in Claim 6, **characterised in that** the measurement means (14) are movable in a direction at right angles to the tree stem (15).

5 8. The harvester as claimed in any of Claims 1 to 7, **characterised in that** the measurement means (14) are photocells.

9. The harvester as claimed in any of Claims 1 to 7, **characterised in that** the measurement means (14) are ultrasound devices.

10 10. A method of measuring the transverse dimension of a tree stem (15) in connection with felling thereof, the tree stem (15) being moved axially past a measurement device (11) in a harvester (1), comprising the steps that a pair of measurement means (14) are moved towards the tree stem (15), that pairs of read-off values are registered on detection of the outer contour of the tree stem (15), and that the transverse dimension of the tree stem (15) is  
15 calculated from each pair of read-off values, **characterised in that**, after detection of the outer contour, the measurement means (14) are moved a distance away from the tree stem (15) in order thereafter once again to be moved towards the tree stem (15) for a renewed detection of the outer contour, and that a read-off value which exceeds the previous read-off value is replaced by the previous value before a renewed calculation of the transverse  
20 dimension.

11. The method as claimed in Claim 10, **characterised in that** the tree stem (15) moves axially past the measurement device (11) in a tapering direction.

25 12. The method as claimed in Claim 10 or 11, **characterised in that** the total volume of the tree stem (15) and suitable cutting lengths are calculated directly from the computed transverse dimension values and an associated length dimension.